

Resilient Building Toolkit Adaptation Measures Factsheet

Name and description of measure: Building cooling & natural ventilation

There are a number of actions and measures which can be taken to cool a building. These include:

1. Increase cooling set points, remove local control where possible and ensure timers are installed and set correctly.
2. Install interlock with heating system to prevent simultaneous heating and cooling.
3. Replace old inefficient equipment.
4. Install controls to switch off cooling if windows are opened.
5. Investigate thin client technology to reduce potential cooling loads.
6. Night time free cooling/natural ventilation.

Note: If air conditioning systems are in place, actions to minimise and/or mitigate the associated carbon emissions should also be fitted where appropriate.

Cost of measure (high, medium or low):

Referring to the list of actions above the cost levels are as follows:

1. Low
2. Low
3. High dependent on size/solution
4. Medium
5. High
6. Low

Pros and Cons:

Pros:

Can mitigate heat related health issues and increase productivity of staff during periods of high temperatures.

Cons:

Cooling has a higher cost than natural ventilation (see factsheets on Building fabric cooling, Solar Shading and Chilled Beams).

Potential impacts from climate change - increasing cooling requirements should be considered.

Need to consider operational working hours of spaces requiring cooling (working later in evening and breaks at hottest points of the day).

Control of cooling essential to reduce carbon emissions.

If removing cooling consideration for increased ventilation must be made.

Where cooling is already installed changing controls from local users can be problematic.

Effectiveness of measure (high, medium or low):

Medium dependant on usage and purpose.

Link to case study and possible contact:

Refer to CIBSE Guide A, B, F, J and Knowledge Series 03.